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SUPREME COURT OF THE UNITED STATES

October Term, 1942

No. 71

UNITED CARBON COMPANY, et al.

v.

BINNEY & SMITH COMPANY

PETITION FOR LEAVE TO FILE BRIEF AMICUS CURIAE

In the above entitled case Edward F. McClennen of the bar of this Court and of counsel for Godfrey L. Cabot, Inc. requests leave to file as amicus curiae the accompanying brief.

Godfrey L. Cabot, Inc. is the owner of the Billings and Offutt patents set forth in the record in this case and in the accompanying brief. In the ten years last past and beginning in 1932 Godfrey L. Cabot, Inc. has made under these patents vast amounts of carbon black in pellet form. Therefore, this company is greatly interested in the questions of the validity and scope of the Wiegand and Venuto product patent presented by the plaintiff as the basis of this suit.

Respectfully submitted,

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October , 1942

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SUPREME COURT OF THE UNITED STATES

October Term, 1942

No. 71

UNITED CARBON COMPANY,
UNITED CARBON COMPANY, INC.,
Petitioners-Defendants,

v.

BINNEY & SMITH COMPANY,
Respondent-Plaintiff.

BRIEF OF AMICUS CURIAE

This case is before this Court under United States Code, Title 28, section 347 — Judicial Code, section 240 as amended — on a petition for certiorari filed in April, 1942, granted on May 11, 1942, to determine the correctness of the judgment of the Circuit Court of Appeals for the Fourth Circuit, pursuant to its opinion handed down January 6, 1942, 125 F. (2d) 255 (R. 461), of which rehearing was denied March 11, 1942, 126 F. (2d) 3, re-

versing a judgment of the District Court of the United States for the Southern District of West Virginia (R. 474), entered pursuant to findings of fact handed down February 17, 1941, 37 F. Supp. 779 (R. 1) that Claims 1 and 2 of the plaintiff's patent issued to Wiegand and Venuto, No. 1,889,429, filed December 2, 1927 and patented November 29, 1932, the only ones involved in the suit, were not a novel invention and were not infringed by the defendants. These claims are:

1. Substantially pure carbon black in the form of commercially uniform, comparatively small, rounded, smooth aggregates having a spongy or porous interior.
2. As an article of manufacture a pellet of approximately one-sixteenth of an inch in diameter and formed of a porous mass of substantially pure carbon black.

The decision of the District Court applied and the decision of the Circuit Court of Appeals disregarded, it is respectfully submitted, the principle reannounced by this Court January 5, 1942 in *Morton Salt Co.* v. *G. S. Suppiger Co.*, 314 U. S. 488, 492, that "the public policy which includes inventions within the granted monopoly excludes from it all that is not embraced in the invention." Wiegand and Venuto did not invent pure carbon black in the form described in Claim 1, or a manufactured pellet thereof, described in Claim 2, and the particular form described was not the valuable attribute in the industry or commerce. Their invention was not in excess of a means of reaching the described form by methods which admittedly the defendant did not pursue, and which the plaintiff abandoned, before the patent issued.

Substantially pure carbon black in the form described in the claims was well known, and means of making had been disclosed before December 2, 1927, the filing date of the plaintiff's application.

First Question Involved

The first question involved in this case is whether or not a man, who invents an unsuccessful way of putting a common product into a known readily perceivable and simple form more convenient for handling, can monopolize that form merely by inventing a way of formulating it and thereby can exclude the rest of the public from making, selling or using that form when made with commercial success in a way bearing no resemblance to the claimant's process.

To permit such a monopoly certainly extends the right beyond what the claimant invented.

Wiegand and Venuto did not invent the form defined in the claims, but only described one way of making that form, not commercially successful, and abandoned at the end of 1931 (R. 34, 56, 63) before commercial success was attained and before the patent issued.

STATEMENT OF THE CASE

The plaintiff as owner of the Wiegand and Venuto patent sued the defendants for infringement of the above quoted Claims 1 and 2 for the product. Admittedly, the defendants did not use the process described in the patent.

The District Court, sitting without a jury, found as to the controversy the pertinent facts to be (R. 2):

"The agglomeration of dry powders to eliminate dustiness and facilitate commercial handling was well known to the prior art when the application for plaintiff's patent was filed."

. . . . . .

"In order to describe its product, plaintiff was obliged to describe it, in testimony, in functional terms."

"The description of plaintiff's product in claims (1) and (2) is not sufficiently definite to distinguish plaintiff's product from the product of prior art processes or from a

product taught by the prior art and improved by the mechanical skill of those skilled in the art."

"If claims (1) and (2) were valid, and are construed broadly, there would be infringement, as plaintiff's product and defendants' product are generally similar."

"If claims (1) and (2) were valid, and are construed strictly, there would be no infringement, as there are recognizable differences between the product described by the claims of the plaintiff's patent and defendants' product, such as degree of porosity, degree of purity, and degree of uniformity in size."

"Plaintiff has not established that it achieved commercial success with its product described in claims (1) and (2) and manufactured by the process of plaintiff's patent."

"Plaintiff does not now use, and has not used since 1932, the process of the patent in suit. . . . . ."

"The product described in claims (1) and (2) of the patent in suit did not require the exercise of the inventive faculty, and was lacking in novelty, in view of the prior art, ..."

The Circuit Court of Appeals rests its opinion, 125 F. (2d) 255 (R. 461) on the proposition, that as Wiegand and Venuto were the first to find a satisfactory way of formulating carbon into pellets of the described character, they were entitled to a monopoly not only on the process which they had claimed, but also on the product which they had not invented, even if that product were formed by a different process.

The Plaintiff's Patent

The application for this patent on December 2, 1927, as issued November 29, 1932, set out (1) the characteristics of manufactured carbon black of dustiness and excessive bulk, and (2) the attempts that had been made to overcome these characteristics, including reduction of the black to a paste with water or other volatile liquid, such as gasoline and the like, followed by an evaporation producing a hard cake and tendency to chunkiness, reducing its ready dispersibility in use thereafter, and (3) the object of their invention to secure greater density, freedom from dust, freedom from gritty particles, less absorbed or occluded gases, reduced oil absorption than the ordinary powder form, and capable of considerable handling without crushing or dusting, and (4) while the pellet form is a very convenient form of the carbon black, the shape of the particles is not the most important characteristic of this novel carbon black. The application describes the process as treatment of the carbon black with two immiscible liquids, the second having greater attraction for or greater ability to wet the particles, which causes the carbon black on agitation or evaporation to form into pellets hard enough to stand ordinary shipment or handling, but easily crushed by moderate pressure to their original dispersible softness. Following this is further detail of the process, with exemplifications. This is followed by the two product claims above quoted and a third product claim, and seven process claims (R. 231, 249-252).

It is to be noted that the product claim No. 1 is not limited to a product made by the process invented, or by any resembling it or to any size or to any degree of ready dispersibility, or to any hardness or softness of surface, or presence or absence of tendency to abrasion or to dustiness or dispersion in dust. The claim extends to any aggregates of substantially pure carbon black if their interiors are spongy or porous and they are comparatively small and rounded.

Product claim No. 2 defines the size as a pellet of approximately one-sixteenth of an inch in diameter.

According to the plaintiff, the features of the product which had commercial value were (1) purity, (2) sufficient hardness to handle, (3) softness enough to get results, (4) flowability (R. 22).

The product claims did not include any of these features except purity (R. 2). The claims did not require any hardness, or any softness or any flowability. Conversely, the claims required features which were of no commercial value, namely, (1) uniformity of the aggregates, (2) comparative smallness or one-sixteenth of an inch diameter, (3) internal sponginess or porosity (R. 2).

None of these three characteristics required by the claims was of any value in making, transporting or using carbon black.

(1) Uniformity of the aggregates was of no consequence. It was not as if the aggregates were to enter as such into the finished product. On the contrary, they were to be broken down before they entered into the final product. That was why dispersibility was wanted so that the final dispersion would be as complete as with the carbon black before aggregation (R. 101, 102). The commercial product did not have uniformity. On the contrary, the size variation from small to large was from .0059 inches to .0555 inches, or over nine times as large (R. 129-131, 141).

(2) Comparative smallness was intrinsically of no help and is not specified by purchasers (R. 121). Reduction in volume per weight saved space in handling and shipping. The commercial aggregates may have a diameter twice one-sixteenth of an inch (R. 107) or even four times that size, that is, one quarter of an inch (R. 92).

(3) Internal sponginess is no commercial gain. Absorptiveness is not wanted. Density is wanted, so as to reduce bulk. This sponginess is the residuum of nonsuccess in driving out the voids to reduce bulk. Spongi-

ness is not wanted commercially. The patent specification accords sponginess no place of advantage. Nowhere does it mention sponginess as a desired quality (R. 249-252). Sponge is absorptive and is not dispersible readily. Its characteristic is liquid imbibing (R. 94).

The only basic feature of the process was the couse of two immiscible liquids, the recommended second one being gasoline, preferably high grade, such as aviation gasoline (R. 251, line 32).

The specification recognized the reduction by water or gasoline alone as old (R. 249, line 27).

The basic feature of two liquids was abandoned at the end of 1931 (R. 34, 63) before commercial success had come and before the patent issued.

That the only thing approaching novelty was the use of two liquids is emphasized when it comes to comparison hereinafter with the prior art; but this is apparent on the face of the specification. Caking and loss of dispersibility were attributed to the use of **a liquid** (R. 249, lines 43-52). The applicants sought to avoid this either "by drying very quickly with violent agitation," or by "drying by quickly removing the liquid by absorbing it into the walls of a small porous container," "or by displacing the original liquid by another in such manner as to avoid free suspension of the particles, in a liquid phase" (lines 53-61). They announce their discovery as "a process which includes the simultaneous or successive treatment of the carbon black with two immiscible liquids, the second liquid having greater attraction for or greater ability to wet the particles" (lines 75-80). Their steps are successively mixing carbon black with one liquid, adding a second substantially immiscible liquid with greater ability to wet the carbon particles, agitation until the first liquid is practically free from carbon, removal of this liquid and separating this first liquid and then removing the other liquid by evaporation (R. 250, lines 4-12). "Care should

be taken to insure the complete wetting of the particles with the water, as otherwise the particles will be wet directly by the gasoline, and in drying harsh particles may result" (lines 27-31). "If too much gasoline is used, the particles will compact to comparatively hard pellets" (lines 58-60). "During the agitation and separation any grit which there may be in the carbon black may settle to the bottom, while the pellets float to the top and thus the purification of the carbon black will be effected at the same time the pellets are formed" (lines 100-105). "We find that the addition of substantial proportions of certain other substances to either of the liquids used in the process of the present invention does not impair the dispersibility of the resulting carbon black" (R. 251, lines 4-9). "There are various factors which enter into the process and these may be varied to get the pellets harder or softer or larger or smaller" (lines 21-24). "In general it is preferable that the creaming agent be completely volatile so as to leave the carbon pure. In special cases it is not necessary where the residue will impart special properties to the pellet" (lines 52-55). "It is possible also to reduce the flying of the black by not carrying the above treatment to its ultimate pellet stage. It will come out as an amorphous mass somewhat flaky and fluffy, and must be separated from the mixture by filtration" (lines 72-77). "Owing to the preferential wetting power of the gasoline, the carbon particles leave the water and are wetted by the gasoline, building up a layer instead of forming globules or pellets as is the case when the agitation method is used" (lines 82-87). **"The whole process of pellet formation depends upon the selective wetting power which the various solvents exert on the carbon black"** (lines 97-100).

Claim No. 4 is "The process of treating carbon black which includes the steps of mixing the carbon black with a liquid to form a very thin paste, adding a second liquid

in smaller amount and which is immiscible with the first liquid, agitating, **separating the carbon black and second liquid from the first liquid, and then separating the carbon black and the second liquid**" (R. 252, lines 20-29).

Claim No. 7 is "The process which includes wetting carbon black with water, bringing it and gasoline into contact under conditions causing the **gasoline to displace substantially all of the water from the carbon black,** removing the carbon black mass wetted with the gasoline, and **evaporating the gasoline**" (lines 50-56).

Thus Wiegand and Venuto have set out what they thought was a new idea of using two liquids successively, one water and the other gasoline, to the end that the gasoline because of its greater wetting properties would drive the water out of the carbon black and rise with the black from the water. Whether or not this idea was good or new, there was nothing else basic or new in their patent.

This was the idea that was discarded before commercial success had come and before the patent issued. It was discarded at the end of 1931 (R. 34, 63).

(Type in quotations in this brief, supra and infra, not heavy in original.)

State of the Industry and Art Preceding December 2, 1927

Prior to December 2, 1927 products had already been conceived and disclosed publicly which come within the description of the product claims now in suit. "The plaintiff claims a manufacture, not a mode of making it; and the important inquiry, therefore, is, whether the prior publication described the article. To defeat a party suing for an infringement, it is sufficient to plead and prove that the thing patented to him had been patented or described in some printed publication prior to his supposed invention or discovery thereof. Rev. Stat., sect. 4920. What is required is a description of the thing patented, not of the steps necessarily antecedent to its production" (*Cohn* v. *United States Corset Co.*, 93 U. S. 366, 377).

On May 26, 1916, William C. Geer filed an application, on which Patent No. 1,245,700 issued on November 6, 1917 (R. 311).

This described a method of compounding rubber with ingredients such as gas-black (carbon black) "which occur in the form of a powder so finely divided or impalpable that if used in a dry condition they tend to spread through the atmosphere of the mill room, causing the loss of a portion of the powder and discomfort to the operatives."

In this application he said:—"I find that by mixing the powder with a suitable liquid before it is introduced to the batch of rubber on the rolls of the mill, and bringing the powder to a granular condition through the wetting of the particles and their concretion into grains, the objection stated is entirely overcome." "Two liquids which I successfully employed for this purpose are water and kerosene oil, both of which have the effect of rendering the gas-black dustless and yet not pasty when mixed therewith in suitable proportions. For example, I mix two parts, by weight, of gas-black with one part of kerosene oil in a suitable closed vessel which preferably contains rapidly-

revolving paddles which assist the mixing and promote the attainment of the granular condition" (R. 311, lines 25-35). "The use of water gives an effect substantially the same as kerosene, but it requires a longer time for compounding on the mill in order to permit the drying-out of the water" (R. 311, lines 53-57).

Geer used a **single** liquid, either water or kerosene, and **no binder.** His product was pellets, that is, substantially **dustless granules** (R. 311, lines 66, 67).

The product of this process would come within the product claim No. 1 in suit.

Such product has been made in experimentation by the use of this Geer process (R. 170-172).

On August 28, 1917, Wilbur Clark Knowlton and Harry A. Hoffman filed an application on which Patent No. 1,286,024 issued on November 26, 1918. This was for an improvement on the Geer process. Knowlton and Hoffman say: — "Instead of using the lampblack in its natural condition, we prepare and treat the fine powder so as to cause its concretion into **friable grains** or small lumps, **dry and substantially free from dust,** and in this form incorporate it with the rubber on the roller mill or in any suitable masticating apparatus heated in the usual way to soften the rubber, the **friability** of the lumps or **grains** permitting a uniform distribution of the filler throughout the rubber. We may use **water,** or other volatile liquid **alone** as a concreting agent, first mixing enough of it with the lampblack to produce the desired condition, and then drying the mass before mixing it with the rubber, or . . . . . ." (R. 309, lines 21-36).

The claims of this patent included "mixing the lampblack with **water,** evaporating the water, leaving the lampblack in a **granular** or lumpy condition" or "producing a condition of **friable grains** or lumps" (Lines 85-95).

The process and product described in these claims included the elements of pure carbon black, no binder, water

or other volatile liquid alone as the wetting and concreting agent, mixing as by rapidly-revolving paddles already disclosed by Geer, and then evaporating and as a product **friable grains** or small lumps dry and substantially free from dust, the friability permitting a **uniform distribution.**

In 1918, these men had disclosed a means of making and a product which had all the commercially valuable qualities of the product described in claim 1, now in suit, that is, substantially pure carbon black in the form of small friable grains substantially free from dust.

Such a product was not a new conception on December 2, 1927.

The product of this process would come within the product claim No. 1 in suit.

Such product has been made in experimentation by the use of this Knowlton and Hoffman process (R. 172-178).

The plaintiff's contention amounts to saying that the plaintiff by the claims in suit first made on December 2, 1927 acquired a monopoly of this product conceived and disclosed in 1922 and before, so that Geer, Knowlton and Hoffman and the public would be infringers if they made the product so disclosed by themselves in 1922 and before.

On March 22, 1923, Trent received acceptance by the United Kingdom Patent No. 183,430 of an application dated May 31, 1922, with the United States Convention date of July 20, 1921 (Apx. 312). This described a process for treating "finely divided carbonaceous material of the kind in which the material in liquid suspension, is agitated and subjected to the action of a hydrocarbon treating agent, whereby the carbonaceous material agglomerates . . . . . " (lines 15-21). This was designed for the treatment of coal dust. It was "an object of this invention to provide a process for forming these agglomerates of the fine carbonaceous particles of oil of substantially uniform size, which shall be of substantially spherical form, which

agglomerates are capable of being carried by the water in which they are contained to a point of collection and there separated from the water and suspended impurities" (lines 64-73). "Our invention is primarily based on the discovery that by controlling the character of agitation and the period of treatment of the mixture consisting of fine comminuted carbonaceous particles with water and a proper proportion of hydrocarbon oil, said particles combine in aggregates of a spherical form of a diameter ranging from 1/16 of an inch to 2 inches, and when so formed can be discharged with the water from the agitator" (lines 73-82).

This described for coal dust (and so for carbon black) a **floatation** process, controlled **agitation** purification and substantially **spherical pellets 1/16 of an inch in diameter** or larger.

Fine "carbonaceous" particles includes "carbon black" (Wiegand R. 246).

"To practice successfully the process each particle of material should be agitated at a certain degree of **violence** to form the **spheres** and a definite time of treatment to control the size of the spheres or aggregates formed. The longer the period of treatment the larger the size of the aggregate" (R. 313, lines 37-44).

This process, primarily designed for application to coal dust, suggests at once to the expert its possibilities for carbon black, its treatment with water and gasoline (liquid hydrocarbon), agitation determined in amount by the size of the product and the formation of the aggregates in spheres. Carbon black is "carbonaceous material".

In experimentation spongy or porous pellets have been made by this process (R. 178-179). Whatever might be used as the particular hydrocarbon agent for powdered coal, "a suitable hydrocarbon agent" (R. 312, line 54) would be one sufficiently volatile to leave the pellets as desired.

On October 16, 1923, Joseph G. Coffin and Alexis W.

Keen filed an application on which Patent No. 1,561,971 issued November 17, 1925.

"This invention relates to a method for treating pulverulent material and to the product thereof" (R. 319, lines 13-15). The material given prominence is clay. "Clay has more recently been extensively used as a filler for rubber compounds" (R. 319, lines 20, 21).

One of the product claims was "As a new article of manufacture, dried pulverulent material in the form of very small individually dried friable globular masses composed of lightly cohering particles of the material" (R. 321, lines 116-120).

Substitute carbon black for dried pulverulent material and the identity to the plaintiff's product claim No. 1 becomes apparent. In the use of this process by the expert the drying temperatures recommended for clay would be reduced to the temperature normally required for drying carbon black, such as 125 degrees Centigrade, or 257 degrees Fahrenheit (R. 139).

The Trent and the Coffin and Keen disclosures brought their features in the treatment of "fine carbonaceous particles" and "in pulverulent material such as other rubber fillers" to an art already possessed of the need of these in attacking the dustiness of carbon black as it had been shown already by Geer and by Knowlton and Hoffman.

But had these contributions never been made it would remain true that Geer and Knowlton and Hoffman had disclosed the basic elements of the Wiegand and Venuto product, so that to make it did not require any "flash of creative genius" but "merely the skill of the calling" (*Cuno Corp.* v. *Automatic Devices Corp.*, 314 U. S. 84, 91).

Nothing inventive was added before the dry process conceived in 1932.

Summary of the Prior Art

The descriptive matter in the plaintiff's patent and in the prior patents are valuable not only to show the particular inventions claimed, but also to show the state of the prior art. These show the existence in the art of: —

Agglomeration or aggregation of carbon black in dustless grit-free granules.

Advantages of absence of non-evaporable binders.

Wetting as a means.

Kerosene (namely, petroleum in which the cracking or distillation has not been carried far enough to reach the grade of commercial gasoline) as the wetting agent alone.

Water as the wetting agent alone.

Agitation with violence either by rotating, shaking or tumbling.

Variations in the proportions of the carbon black and the wetting agent, by the exercise of experienced judgment to reach the desired liquidity.

Variation in rate, time and extent of agitation, by the exercise of experienced judgment to reach the desired size and hardness.

Spherical aggregates.

Spongy porous aggregates.

Friable aggregates for uniform dispersion.

Floatation for sorting removal.

Evaporation to dry.

Pellets 1/16th of an inch in diameter.

Flowable aggregates.

Sufficient bonding to prevent breaking during handling.

Nothing was new in the Wiegand and Venuto process unless it be the two successive immiscible liquids. Nothing was new in their product.

No Commercial Success Under Plaintiff's Patent

There is great question whether what the plaintiff manufactured at any time got its qualities from the two-liquid feature. Its success improved, on the abandonment of this feature at the end of 1931.

If the violent assumption be made that such good qualities as its product had, were due to this subsequently abandoned feature, it still remains true that no commercial success had come from that feature.

It makes no difference that there may have been other reasons for the lack of commercial success. A patent cannot be advanced in the proof of its validity by commercial success if there was no commercial success.

The District Court has found rightly that the plaintiff has not established that it achieved commercial success with its product described in Claims No. 1 and No. 2 and manufactured by the process of plaintiff's patents (R. 3, Finding (7)). The Circuit Court of Appeals has failed to observe, it is respectfully submitted, that commercial success did not come until other inventions, not improvements on the patent in suit, but radically different from it and gaining nothing from it, had been made in 1932.

The Circuit Court of Appeals says: "Efforts to produce carbon black in a form which would eliminate the dust nuisance engaged the attention of a number of the best minds connected with the rubber industry, but until the issuance of the patent in suit these efforts were unavailing" (R. 462, 125 F. (2d) 255, 256). The patent in suit issued on November 29, 1932 (R. 249).

There is a vast amount of carbon black manufactured and sold in the United States. In some years the amount manufactured has run as high as 500,000,000 pounds (Pltf.'s Ex. 8, p. 5). It sells at a very few cents a pound, under four cents, often under three cents.

Out of this vast amount the plaintiff sold in pellet form (R. 57):—

In 1928, 5,000 pounds.
In 1929, 20,000 pounds.
In 1930, 164,000 pounds.
In 1931, 194,000 pounds.

In this last year the sales were very much less than one-tenth of one percent and the premium of one cent above that of the uncompressed black was in the aggregate less than **$2,000** (R. 58). This is **gross.** What the cost of production was, does not appear. With such small production there is no occasion to presume any profit.

There is nothing that detracts from the finding of the District Court that there was not commercial success with this product manufactured by this process.

Edmund Billings, Vice President of Godfrey L. Cabot, Inc. (R. 162) testified that samples that he saw of the commercial product made under the Wiegand and Venuto process prior to 1932 looked like black scrambled eggs (R. 166), broken down so inside of the bag was a mixture of pellets and broken pellets, of which "scramble" was a good description, a mixture of carbon and dust (R. 167). There was every reason why the judge of the District Court should believe Mr. Billings, whom he saw.

The plaintiff's brief in the Circuit Court of Appeals quotes from the opinion in the case of *Godfrey L. Cabot, Inc.* v. *J. M. Huber Corporation*, 35 F. Supp. 373, dealing with the problem of the production of carbon black in dustless aggregates suitable for shipment and subsequent handling. In this same opinion (pp. 373, 376) the Court said of Mr. Billings: "The testimony given orally in court was solely by two expert witnesses, Edmund Billings for plaintiff, and Ira Williams for defendant. I constantly had a feeling of wanting to 'take off my hat' to these two expert witnesses. I will plagiarize a little to say they were 'a breath of spring', compared to the average of

experts who come into my court. Each of them had lived this carbon black manufacturing and processing, from an educational, a scientific and practical standpoint, for years. They are college men of high degrees in science, but more important, with the broadest practical experience in the very matters involved. Their profound grasp of the scientific subjects inquired into, their readiness and ability to answer every question promptly and with such unusual clarity, accompanied by a conscientious desire to give just the facts, as they understood them, and just those opinions, which, from their respective viewpoints, they felt could be abundantly justified, greatly lightened the burden of the Court."

There is no reason why the judge of the District Court in the case at bar should not have given the same credence to Mr. Billings' testimony.

The finding of fact of the District Court of non-success commercially, stands unimpaired.

Mr. Billings testified in effect that the Wiegand-Venuto patent was among the failures to solve the dustless problem (R. 165) because "the product of that process, as I saw it commercially, did not answer the demand" (R. 166), and the cost was obviously high so that "the two together produced a commercial failure" (R. 166).

The Changes of 1932 and Thereafter

Beginning in 1932 came the following patents: —

July 18, 1932, application of Edmund Billings and Harold H. Offutt, on which patent issued June 14, 1938, No. 2,120,540 (R. 256).

November 16, 1932, application by the same inventors, on which patent issued June 14, 1938, No. 2,120,541 (R. 262).

August 12, 1933, application by the same inventors, on which a patent reissued November 12, 1935, Re. 19,750 (R. 269).

August 20, 1934, application by Harold H. Offutt, on which patent issued November 1, 1938, No. 2,134,950 (R. 275).

August 12, 1933, application by Edmund Billings and Harold H. Offutt, on which after division patent issued May 5, 1936, No. 2,039,766 (R. 279).

The above described application of November 16, 1932 was for the dry process of treating flocculent carbon black, or a mixture of flocculent carbon black and pellets by turbulent agitation to produce a dustless pellet carbon black product. This is one of the patents which was sustained in the above cited case of *Godfrey L. Cabot, Inc.* v. *J. M. Huber Corporation*, 35 F. Supp. 373, and on appeal in 127 F. (2d) 805, as a novel, much needed and successful invention for making carbon black by turbulent agitation.

It revolutionized the industry and brought commercial success (R. 164).

In the fall of 1932 the Cabot Company established a plant for the manufacture of carbon black in pellet form (R. 162) with a capacity of about 7,000,000 pounds a year.

The sales of the Cabot Company itself in pounds (R. 163) have been: —

Year	*Pounds*
1933	8,000,000
1934	23,000,000
1935	39,000,000
1936	62,000,000
1937	58,800,000
1938	45,000,000
1939	73,000,000

In the period from 1934 to 1940, inclusive, the defendant has produced and sold under this Cabot process **182,381,171 pounds.**

In the same period the defendant has sold pellets made by its extrusion process, **153,514,875 pounds** (R. 201).

Neither of these processes had the remotest resemblance to the Wiegand and Venuto process.

In the period from 1937 to 1940, inclusive, the defendant has sold, manufactured under the Sayre process, **52,188,793 pounds** (R. 201).

The plaintiff makes no claim that this process infringed the Wiegand-Venuto process. It does claim that the product infringed product claims 1 and 2 of that patent.

In 1932 the Columbian Carbon Company began to manufacture under the Glaxner single liquid process (R. 63, 34, 216, 37). This company was independent of the plaintiff (R. 64). The plaintiff was a stockholder in the Columbian Carbon Company. The plaintiff was also the selling agent for the Columbian Carbon Company (R. 63). Throughout the record "plaintiff's product" has been used indiscriminately to describe the "scrambled" product made by the Wiegand and Venuto process (R. 167) and the Micromex beads produced by the Columbian Carbon Company under the Glaxner process. Error is almost inevitable if there is not kept in mind the distinc-

tion between the unsuccessful product made by use of the Wiegand and Venuto process and the product of the Columbian Carbon Company made by the Glaxner process.

Glaxner, according to Mr. Wiegand, was one of the most brilliant mechanical geniuses he had ever known (R. 216). He devised a scheme whereby with water at a properly selected range he could make beads (R. 216). His contribution was a major one (R. 216).

On November 6, 1933 he made an application which resulted on March 5, 1940 in reissue patent No. 21,379 (R. 285).

The Columbian Carbon Company has used this single liquid, water, process since the beginning of 1932, or end of 1931 (R. 63). The Plaintiff's sales in pounds (R. 37) of the product of this process have been: —

Year	*Pounds*
1932	281,000
1933	800,000
1934	3,300,000
1935	15,000,000
1936	30,000,000
1937	44,000,000
1938	53,000,000
1939	97,000,000

The Glaxner method (R. 285) was not an improvement on the Wiegand and Venuto process. It was a complete departure from the basic feature of two liquids, the basically essential feature of the Wiegand and Venuto patent. The two processes have nothing in common. The Glaxner process had a greater resemblance to the Geer process and to the Knowlton and Hoffman process than to that of Wiegand and Venuto.

It was wholly after the revolutionary changes in 1932 that commercial success came to this industry.

The Circuit Court of Appeals says that the Glaxner process resulted in an improvement in the product (125 F. (2d) 255, 257). The Court made the fundamental error, it is respectfully submitted, in treating this process as an improvement on the Wiegand-Venuto process. It was not. It was a contrasting process. Whether new or a skilful man's use of the Geer process, it is unnecessary to determine.

The Circuit Court of Appeals treats not only the one-liquid process but also the dry process as if an improvement on the Wiegand and Venuto two-liquid process (125 F. (2d) 255, 257). It is respectfully submitted that this is a misdescription. The turbulent agitation and turbulence in the dry process was the invention of Billings and Offutt.

From this came the great commercial success in the industry.

Interpretation of the Claims in the Light of the Patent Office Proceedings on the Application

The Wiegand-Venuto application filed December 2, 1927 contained eleven product claims and thirteen process claims (R. 334). The third product claim became, without amendment, Claim No. 2 of the patent when issued.

On July 29, 1928 (R. 341) to meet rejections by the examiner the claims were amended by striking out seven product claims, Nos. 1, 2, 5, 7, 9, 10 and 22, and adding one product claim, No. 25, which was identical with what became Claim No. 1 in the patent when issued (R. 342).

On February 20, 1932 (R. 389) to meet rejections by the examiner the claims were amended by striking out two product claims, Nos. 4 and 8.

Among the product claims withdrawn were these (R. 334): —

4. A pellet formed of soft carbon black particles, the pellet being sufficiently hard to withstand ordinary shipment or handling, but readily breaking down to a fine state of subdivision upon the application of slight pressure.

5. A porous pellet comprising soft particles of carbon black.

8. Soft carbon black particles cohering in small masses of substantially uniform size and having smooth outer surfaces.

Applying the familiar rule of interpretation of the claims allowed by considering the subtraction from them of what was not allowed and was abandoned, it appears that the allowed Claim No. 1 does not include: — Aggregates which do not have uniformity, sponginess and porosity.

Claim No. 2 does not include pellets unless they are approximately one-sixteenth of an inch in diameter and of a porous mass.

The rejected and withdrawn Claim No. 4 was not based on uniformity or porosity or sponginess or size.

It did include a pellet "sufficiently hard to withstand ordinary shipment or handling, but readily breaking down to a fine state of subdivision upon the application of slight pressure."

Claim No. 8 included "having smooth outer surfaces."

The emphasis in Claims Nos. 1 and 2 is on uniformity, smallness, sponginess, and porosity.

The abandonment of Claim No. 4 gave up the element of sufficient hardness for shipment, accompanied with fragility under slight pressure, without sponginess or porosity.

This emphasis on softness and sponginess and porosity in contrast to superficial hardness was pressed by the solicitors for Wiegand and Venuto in the Patent Office proceedings (R. 352, 353, 361, 362).

The distinction is of great importance in the case because it appears from the contentions for the plaintiff as to its actual product and the evidence as to the commercial needs of the industry that the uniformity, sponginess and porosity allowed to the plaintiff in Claims Nos. 1 and 2 were not needed or wanted, and that the abandoned elements, hardness and fragility under slight pressure, were needed and wanted.

The lack of this hardness in the aggregates formed by the Wiegand-Venuto process has been described.

The presence of this hardness and fragility under slight pressure, in the aggregates made under the Billings-Offutt process when made by the defendants, and the lack of uniformity and sponginess in the aggregates in the defendants' product, remains to be described.

Claims Nos. 1 and 2 did not include hardness and fragility under slight pressure. The rules of construction are well established.

Shriber Co. v. *Cleveland Trust Co.*, 311 U. S. 211, 218:—

"Where the patentee in the course of his application in the patent office has, by amendment, cancelled or sur-

rendered claims, those which are allowed are to be read in the light of those abandoned and an abandoned claim cannot be revived and restored to the patent by reading it by construction into the claims which are allowed."

(220) "It is a rule of patent construction consistently observed that a claim in a patent as allowed must be read and interpreted with reference to claims that have been cancelled or rejected, and the claims allowed cannot by construction be read to cover what thus was eliminated from the patent." (221) "The injurious consequences to the public and to inventors and patent applicants if patentees were thus permitted to revive cancelled or rejected claims and restore them to their patents are manifest. See *Leggett* v. *Avery*, 101 U. S. 256, 259."

Indefiniteness of the Product Claims

The monopoly sought in these two product claims Nos. 1 and 2 is, manifestly, not of a combination or composition or to give the product new efficacious attributes for beneficial results.

What was wanted was a self-supplying packaging, more convenient for transportation and handling in later processes.

Before permitting a monopoly of such a form of package, not intricate in structure, it is essential that at least there should be a well defined limit on that, from which the public is to be excluded.

The claims are too indefinite to meet this requirement.

In the testimony for the plaintiff the effort was made to supply this lack of definiteness by reference to the plaintiff's product made by processes other than that of Wiegand and Venuto, and by reference to the functions to be performed (R. 92). Monopolistic claims cannot be enlarged or limited in this way to give them validity beyond the actual descriptions given in the claims themselves.

Claim No. 1 gives no clue to its applicability beyond the requirement that the aggregates, however formed, shall be smooth, round, commercially uniform and of substantially pure carbon black. They need not have a hard surface. They need not have a dustless surface. They need not be free of a disposition to return to dust at any time. They must be comparatively small, but there is no clue to the base of comparison. If the comparison is with the unpackaged particles of carbon black, it means something microscopic.

The application shows a practice of not larger than a quarter of an inch (R. 251, line 63) but there is nothing in the product claim to exclude an aggregate one inch across. If at any time in the handling of carbon black it was preferred to use an aggregate more than an inch across, this claim, if valid, would exclude such a use.

The fact that Claim No. 2 speaks of approximately 1/16th of an inch for size and that Claim No. 1 does not use this measurement indicates that Claim No. 1 means a measurement not so definite.

The requirement of a spongy or porous interior gives **no clue to what structure the public may not use.** Porosity has a wide range; so has sponginess. No one reading the claim can know what in this respect he may make without invading the monopoly. The application says that the pellets are very porous (R. 250, line 80). It says that they are also fragile (line 85). It says that the outside is porous (line 93). This does not assist in determining what degree of sponginess or porosity is described in the product claim.

The attempt in the testimony was to give an idea of the degree of porosity by considering the functions to be performed (R. 92, 88, 61, 54). Fragility on slight pressure which had been sought in the original application (R. 334, Claim No. 4) had been abandoned. That element of definiteness is not in Claims Nos. 1 and 2.

The finding of fact of the District Court is right that "The description of plaintiff's product in claims (1) and (2) is not sufficiently definite to distinguish plaintiff's product from the product of prior art processes or from a product taught by the prior art and improved by the mechanical skill of those skilled in the art" and "In order to describe its product, plaintiff was obliged to describe it, in testimony, in functional terms" (R. 2).

Differences between Defendants' Product and Plaintiff's Product Claims Nos. 1 and 2

The defendants' product differed substantially from the plaintiff's product claims.

Defendants' pellets are not spongy or porous, but are harder and stronger.

Their pellets are not uniform.

Their product is not substantially pure carbon black.

Through the testimony there runs an attempt to compare the defendants' product with the plaintiff's product. That is not the test. It may be or it may not be that the plaintiff's product conforms to the product claims in the plaintiff's patent. It is immaterial.

The comparison of importance is between the product described in Claims Nos. 1 and 2 and the defendants' product.

The finding of fact in the District Court is correct, that "there are recognizable differences between the product described by the claims of the plaintiff's patent and the defendants' product, such as degree of porosity, degree of purity, and degree of uniformity in size."

Defendants' Pellets Are Not Spongy or Porous, But Are Harder and Stronger

If to give the claims sufficient definiteness to be valid, resort is had to the application, porosity means "very porous" (R. 250, line 80), "easily reduced to soft minute particles" (line 86), "which cannot be told from the original particles except that possibly they have a more unctuous feel" (lines 86-89).

If in order to give sponginess sufficient certainty to render the claim valid, reference be had to the author's understanding, it is that property which a sponge ordinarily has. It means in plain English, imbibing (Wiegand R. 94), absorptiveness, tendency to take up liquid.

The defendants' product by the Sayre process was "rather uniform in density throughout and decidedly free

from much porosity" (R. 156). There was quite a difference in fracture. "The one pertaining to the Sayre pellet is a clear fracture, showing uniformity, whereas in the Wiegand and Venuto type pellet the fracture is not as clean and it shows irregularities" (R. 156). "Naturally a pellet which is hard requires more pressure for it to be broken than a pellet which is not as hard" (R. 158). To crush the Sayre pellet required a pressure of 16.8 in comparison with only 6.2 required to crush the Wiegand and Venuto pellet (R. 159). "The figures indicate to me that the Dixie-Densed pellet is much harder than the Wiegand and Venuto pellet" (R. 159).

A pictorial representation of the interior of the Wiegand and Venuto pellet appears on page 29 of defendants' Exhibit 20, the booklet entitled "Flow Carbon". A photograph of the defendants' pellet is Exhibit 25. This first picture is representative of the pellets under the Wiegand-Venuto patent generally (R. 155); the second is representative of the defendant's pellets under the Sayre process generally (R. 155).

As to this pellet of the plaintiff's, Dr. Drogin said (R. 152): "This pellet which I see before me in no way resembles the interior of a Sayre Dixie Densed pellet. The picture before me shows what I construe as a large number of voids and difference in density, whereas the Sayre pellet which I just examined showed pretty closely uniform dense interior with only one hole."

He said further: "In all my observations and examinations of the pellets I found that the usual thing was to find a Dixie Densed pellet with a very dense or rather a dense interior in comparison with the spongy and porous appearance of the Wiegand and Venuto pellets made by the two-liquid process" (R. 152-153).

The pellets made by the Billings and Offutt process "are relatively tenacious in their structure". "They cannot be crushed between the fingers by normal pressure"

(R. 265, line 1). This is to be contrasted with the soft spongy Wiegand-Venuto pellets which "are easily crushed by moderate pressure, as between the fingers" (R. 249, lines 86-87). Billings found on examination of the commercial products that they broke down into something like black scrambled eggs (R. 166). In contrast, the product made by the Billings-Offutt process was hard (R. 167).

The density of the defendants' pellets in comparison with the sponginess or porosity of the Wiegand-Venuto pellets is further shown by the weights. For example, the Wiegand and Venuto pellets weighed 17.6 pounds per cubic foot (R. 142), and the defendants' 25.4 pounds per cubic foot (R. 134), a greater weight by 44 percent.

With pellets of the same size and number, the Wiegand-Venuto pellets weighed .0098 grams and the defendants' .0121 grams, or over 20 percent more. In absorptive capacity, the Wiegand-Venuto pellet is more than 60 percent greater than in the defendants' pellets, that is, in the ratio of 10.4 for the latter (R. 144) to 16.8 for the former (R. 135).

The finding of fact in the District Court was right that there were differences between the product described by the claims and the defendants' product in degree of porosity (R. 3). Both (1) density to reduce bulk in shipment and (2) hardness, to avoid the breaking down in handling inherent in the Wiegand-Venuto pellet, (R. 166) were essentials to commercial success.

Defendants' Pellets Are Not Uniform

The pellets made by the defendants' Sayre process varied in the same batch nearly 1,000 percent, that is, from .0059 inches to .0555 inches (R. 129-131).

Defendants' Product is not Substantially Pure Carbon Black

Defendants' pellets, while satisfying purchasers, are not "substantially pure carbon black" as the context shows the meaning of those words in Claims Nos. 1 and 2 of the Wiegand-Venuto patent. The attempt for the plaintiff has been to make "substantially pure" refer only to absence of binders. Carbon black, according to the application, has its commercial value because of "its extremely fine state of subdivision together with the very essential property of being readily and uniformly dispersed in rubber, waxes, oils, and the like" (R. 249, lines 6-9). The results of the objectionable attempts to condense have been that "the resulting cake is hard, the carbon particles tend to hold together in chunks, and they no longer disperse readily and uniformly" (lines 31-34).

"The main object of our invention is to secure carbon black having the desired dispersive properties, greater density, freedom from dust, freedom from **gritty particles** . . . . . ." (lines 62-65). "We have discovered that we can improve carbon black as to all or substantially all of the above mentioned properties without deleteriously affecting any of the properties essential to its satisfactory industrial use" (lines 70-74).

"If there is no organic residue decomposed by heat, there will be no binding of the particles. If there is, a harshness will result due to the decomposition or gumming of the residue (R. 250, lines 54-58).

"It will be noted that during the agitation and separation **any grit** which there may be in the carbon black may settle to the bottom, while the pellets float to the top and thus the **purification** of the carbon black **will be effected** at the same time the pellets are formed" (R. 250, lines 100-105).

It is with reference to the subsidence of the grit, thus eliminating it from the carbon black, that purification is

used. In this context, substantially pure carbon black meant that from which the grit had been removed by this floatation process.

Grit is "a hard particle of carbon". "We consider grit as that part which will be retained on a 325 mesh" (R. 132).

"The **ash** content may be such impurities as sand, metal or any foreign matter that is not part of the black itself or should not be part of it" (R. 132).

"It might be silica or **metal** scraped off the channels or through the passage of the carbon black into the conveyers" (R. 134).

In the operation of the defendants' Sayre plant the loose black is used as it comes from the burner house (R. 119).

The defendants' black which enters the pelleting drums contains any impurities which it may have contained when it came from the burner house, and none of the impurities are removed (R. 134). The pellets were as impure as the constituent carbon black (R. 132). There was no difference in the ash or grit, sand or metal content (R. 132). The ash, grit or other impurities go to the main product (R. 134). "The micro-pulverizer does nothing in the way of purifying the black" (R. 134).

There is nothing in the treatment or result resembling the floatation and subsidence of the grit and foreign matter described in the Wiegand-Venuto application. The defendants' product has not been purified, and in the context in which the words are used in the product claim these pellets are not "substantially pure carbon black".

Persuasiveness of the Findings of Fact By The District Court

The findings of fact by the judge of the District Court are based largely on the oral evidence of witnesses whom he saw and heard. The common rule which Appellate Courts wisely have laid down for themselves applies. No one reading the testimony on a printed page has an equal opportunity with the judge who saw the witnesses to determine the integrity and the comprehended value of the testimony. Every fact found in the statement by the Court (supra p. 4) should be deemed true. The judgment in law required on those facts should be entered.

The very purpose of requiring findings of fact in the District Court is to enable the Court of Appeals to deal with the facts so found, as the facts of the case, and to approve or disapprove the rulings of law made in the District Court on those facts.

There is no evidence, there is no inference, there is no process of reasoning to discredit any of the findings.

The presumption of validity indulged in favor of a patent issued, because of the expert character of the operations of the patent examiners and their knowledge of the field of investigation, disappears in this case because it appears from the record in the Patent Office (R. 322-401) that important facts of the situation were not brought under consideration. Confirmation of this statement requires a comparison of this Patent Office record with the facts that now have been made to appear and have been found by the Court to be facts.

Prominent among the omissions are the patents and the descriptions therein set out under "State of the Industry and Art Preceding December 2, 1927" (supra p. 10): — the Knowlton and Hoffman application of August 28, 1917, the Trent application of May 31, 1922, the Coffin and Keen application of October 16, 1923.

No one unaware of those applications could know sufficiently the state of the prior art.

The facts as found by the District Court should stand.

ASSIGNMENT OF ERROR

The Circuit Court of Appeals, reversing the judgment of the District Court, erred in holding that Claims Nos. 1 and 2 of the plaintiff's patent, when so extendingly construed as to cover the defendants' product, were valid.

ARGUMENT

The grant of a private monopoly by the Government offends a fundamental principle of the nation's public policy and justice. Any grant from the Government is to be construed by its text without extension. The toleration for a Government-granted monopoly under the patent laws to encourage invention, does not extend to a premium beyond the conception which the patentee has created.

"But the public policy which includes inventions within the granted monopoly excludes from it all that is not embraced in the invention" (*Morton Salt Co.* v. *G. S. Suppiger Co.*, 314 U. S. 488, 492).

Manifestly, if the defendants' product was not within the description of Claims No. 1 or No. 2 of the plaintiff's patent, the judgment of the District Court dismissing the suit for lack of infringement was right, and the validity of the claims need not be considered.

Therefore, in discussing validity it is to be assumed that Claims Nos. 1 and 2 covered pellets not spongy or porous, but harder and stronger, not uniform and not of substantially pure carbon black, as the Court has found that the defendants' product had recognizable differences from the product described in the claims, such as degree of porosity, degree of purity, and degree of uniformity in size.

To disregard these differences is not to construe the claims broadly but is to disregard the text of the claims.

The plaintiff gets no gain in this case from its description of process because admittedly the defendants did not use that process. The defendants used the different Sayre process and an extrusion process and the process of turbulent agitation of dry carbon black invented by Billings and Offutt as early as 1932.

It is submitted that Wiegand and Venuto had done nothing to exclude Billings and Offutt, Sayre and the

defendants, and the public generally from making the kind of pellets which the defendants made.

Such an extensive monopoly is wholly unnecessary in order to give to Wiegand and Venuto the full value of all that they contributed to this industry.

They did not invent these pellets. The evidence indicates that they did not invent even a commercially successful way of making them, but even if they did, their monopoly should not extend beyond that way and foreclose the free right of the public to make them in a wholly different way not suggested by Wiegand and Venuto, but in a way that gave a better product to a needing industry.

Not only was the claimed product not a novel product in valuable attributes, but also it was a simple formulation of a single element into a self-creating package, more convenient for transportation and handling.

It is confidently asserted that no decision has been rendered by this Court or in any reported case, before the decision in the Court of Appeals in this case, to give a monopoly of a simple product, to men who had contributed so little to the industry as had Wiegand and Venuto by disclosing the process described in their application.

No decision more nearly approaches the case at bar than that in *Glue Company* v. *Upton*, 97 U. S. 3. This Court held that a patent was not good on "instantaneous or comminuted glue." In that case the patentee took the ordinary glue of commerce then being sold in angular flakes and reduced it into ground form that could be sold in packages. In the specifications, he described the best process which he had devised for doing the work. The Court says (p. 5):—"It thus appears that the invention claimed is not any new combination of ingredients, creating a different product, or any new mechanical means by which a desirable change in the form of a common article of commerce is obtained; but it consists only of the ordinary flake glue reduced to small particles by mechanical

division. . . . . (P. 6) But to render the article new in the sense of the patent law, it must be more or less efficacious, or possess new properties by a combination with other ingredients; not from a mere change of form produced by a mechanical division. It is only where one of these results follows that the product of the compound can be treated as the result of invention or discovery, and be regarded as a new and useful article."

Many distinctions between the claims in the case cited and the claims in the case at bar are noticeable, but the principle asserted is applicable.

Instead of breaking down, the process here was to build up for handling purposes; but Geer had disclosed (supra p.10) that concretion into grains could be obtained by water without making the black pasty, if the black and water were mixed in suitable proportions and agitated by rapidly-revolving paddles. Non-inventive expert experience would determine the best proportions. His product was dustless grains. Knowlton, and Hoffman disclosed that it could be put into friable grains, dry and substantially free from dust, the friability permitting the grains to return to a uniform distribution. They did it with water (supra p. 11), just as the expert Glaxner, disregarding the Wiegand-Venuto process, did it later (supra p. 21). Trent made the agglomerates in substantially uniform size and spherical form by controlled agitation and disclosed a diameter of $\frac{1}{16}$ of an inch and higher. The process was a floatation and agitation process. Violence in agitation was disclosed. The regulation of the size by the period of treatment was disclosed. Coffin and Keen (supra p. 13) disclosed a method for treatment of pulverulent material and pointed out one class as clay, a rubber compound filler. They were granted a patent on "dried pulverulent material in the form of very small individually dried friable masses composed of lightly cohering particles of the material."

A man versed in the art could determine in practice the proper proportions, and the degree of violence in the agitation; and floatation was common. The product had been defined in terms closely resembling those of the product claims in suit.

But had all this been otherwise and had the Wiegand-Venuto process been commercially successful, as it was not (R. 3), it still would remain true that the public ought not to be deprived of the right to make these pellets in a way wholly different from that described by Wiegand and Venuto.

The decision of the Circuit Court of Appeals gives to them a monopoly of something which they did not invent.

It is not necessary to consider whether or not these claims are for a manufacture. "Whether a locational arrangement within a structure can ever be patented as a manufacture need not be determined" (*Carbice Corp.* v. *American Patents Co.*, 283 U. S. 420, 421).

It takes no inventive genius to conceive, or even expert ability to understand that carbon black reduced to pellet form, and yet pulverizable without additional treatment, is easier and more economical to handle than carbon black in its near-smoke state.

The all-inclusive claim of a product and the indefiniteness in description of anything that was new therein fails to meet the requirements laid down in *General Electric Co.* v. *Wabash Co.*, 304 U. S. 364. In speaking of a product claim (368) having similar indefiniteness to the claims in the case at bar this Court said:—

(371) "The claim uses indeterminate adjectives which describe the function of the grains to the exclusion of any structural definition, and thus falls within the condemnation of the doctrine that a patentee may not broaden his product claims by describing the product in terms of function."

(373) " 'Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process.' "

(374) "The claims in suit seek to monopolize the product however created, and may not be reworded, in an effort to establish their validity, to cover only the products of the process described in the specification, or its equivalent."

The decision of the Circuit Court of Appeals should be reversed and the judgment of the District Court (R. 5) dismissing the action should be affirmed.

The Wiegand and Venuto product claims, and emphatically when extended to cover a product such as the defendants', were invalid.

Respectfully submitted;

EDWARD F. McCLENNEN,
Amicus Curiae

October 1942.

SUPREME COURT OF THE UNITED STATES.

No. 71.—October Term, 1942.

United Carbon Company and United Carbon Company, Inc., Petitioners, vs. Binney & Smith Company. | On Writ of Certiorari to the United States Circuit Court of Appeals for the Fourth Circuit.

[December 7, 1942.]

Mr. Justice Jackson delivered the opinion of the Court.

Respondent sued for infringement of patent No. 1,889,429, issued to Weigand and Venuto, relating to carbon black in aggregated form and a process for its conversion to that form. Its complaint was particularized to apply only to claims 1 and 2 of the patent, which are product claims and not process claims. The District Court found these claims invalid as lacking novelty and invention and because they failed to define the product asserted to have been invented in such clear, definite, and exact terms as required by patent law. It also found no infringement. 37 F. Supp. 779. The Circuit Court of Appeals held to the contrary on each of these propositions and reversed. 125 F. 2d 255. The importance of the questions in the case prompted us to grant certiorari. 316 U. S. 657.

Carbon black has been manufactured from natural gas since the 1870's. At present the most extensive of its many uses is as a binder in automobile tires.[1] The particles of carbon black in its original form are extremely fine and dispersable. They are smaller than the length of a light wave, having a diameter of about one-millionth of an inch. One pound of them is said to present surfaces sufficient to cover 12 or 13 acres. Unprocessed carbon black weighs but ten pounds or less per cubic foot.

The fineness and dispersability of the substance causes it to raise in clouds of dust when handled, with consequent losses, discomfort to workmen, and difficulties in manufacturing processes. Since 1915, when carbon black first came to be widely used in the manufacture of rubber, many attempts have been made to

[1] Carbon black is also used as an ingredient in various rubber, wax and resin compositions, phonograph records, paints and lacquers, printers' ink, and carbon paper.

cope with the dust problem. In many cases mixing rooms were segregated at great expense from other parts of rubber factories, and the mills where the carbon black was mixed into the rubber were enclosed to confine the clouds of dust.

Efforts were made to prevent as well as to control the dust. Compressing the carbon black to force out the air and increase its density met with some, but only indifferent, success. Attempts were made to prevent dust by the use of binders in the carbon black to make the particles adhere. These were not satisfactory, since the binders were unwanted and sometimes injurious substances and at best foreign matter to rubber formulas. Wetting and drying the carbon black also proved unsatisfactory, since this caused the particles to adhere in such manner that the aggregate product was not sufficiently friable (i. e., breakable) and dispersable when mixed with other substances.

Weigand and Venuto experimented extensively, and the patent in litigation is the outcome. They mixed carbon black with a liquid such as water; displaced the water with another liquid such as gasoline which was substantially immiscible with the first and had a greater ability to wet the carbon particles; agitated the mixture until the water was substantially free from carbon; and finally removed the gasoline by evaporation. As it apparently must in order to assert invention and infringement, respondent argues that Weigand and Venuto solved the problem of carbon-black dust by a product consisting of carbon black aggregates formed without the use of any binder, sufficiently hard and flowable to prevent the formation of dust, yet sufficiently friable and dispersable for use as a component in the manufacture of rubber and other products.

Manufacture was undertaken, one Glaxner being employed to put into use the process taught by this patent. He soon bettered his instruction by devising a simpler and much less expensive process employing but one liquid. His process was the subject of another patent,[2] and at once superseded that of the patent in suit which thereupon became obsolete. Several other processes to achieve very similar results, including those used by the petitioner, have also been developed and patented.[3] Commercial success

[2] Glaxner, Re No. 21,379.

[3] Billings & Offutt, Re. No. 19,750; Nos. 2,039,766, 2,120,540, 2,120,541; Price, No. 2,127,137; Heller & Snow, No. 2,131,686; Offutt, No. 2,134,950; Grote, Re. No. 21,390.

of respondent's process was short-lived, and the really impressive commercial success has been achieved since the development of the Glaxner process.[4]

The product claims which respondent says the petitioner's product infringed, regardless of the process by which it was made, read as follows: "1. Sustantially (*sic*) pure carbon black in the form of commercially uniform, comparatively small, rounded, smooth aggregates having a spongy or porous interior. 2. As an article of manufacture, a pellet of approximately one-sixteenth of an inch in diameter and formed of a porous mass of substantially pure carbon black."

Section 4888 of the Revised Statutes, 35 U. S. C. § 33, requires that the applicant for a patent "shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery." As the Court recently stated in *General Electric Co.* v. *Wabash Corp.*, 304 U. S. 364, 369: "Patents, whether basic or for improvements, must comply accurately and precisely with the statutory requirements as to claims of invention or discovery. The limits of a patent must be known

[4] Commercial success may be gauged by reference to the following statistics on the sales of pounds of carbon black aggregates:

Year	Sales by respondent "Extrustion" process	Sales by petitioner "Cabot" process*	Sales by petitioner "Sayre" process†	Sales by petitioner "Cabot" process‡	Sales by Cabot Co. "Cabot" process
1929	20,000				
1930	164,000				
1931	194,000	(Total gross sales price, about $2,000.)			
1932	281,000	(In this year the Weigand and Venuto process was superseded by the Glaxner process, which made possible the elimination of a price premium.)			
1933	800,000				8,000,000
1934	3,300,000	2,000			23,000,000
1935	15,000,000	84,875		3,656,294	39,000,000
1936	30,000,000	7,031,000		18,135,756	62,000,000
1937	44,000,000	26,205,000	680,363	11,928,742	58,000,000
1938	53,000,000	29,858,000	3,747,538	11,298,887	45,000,000
1939	97,000,000	48,578,060	17,752,439	11,533,200	73,000,000

*In this process, carbon black mixed with water is forced through small apertures, dried, and broken into short cylinders.

†This process, like the Glaxner process, employs but one liquid, water, and agitation.

‡This is a "dry" process, employing only agitation to cause the particles of carbon black to adhere. It is the subject of a number of patents, the first of which was applied for by Billings and Offutt on July 18, 1932 and issued as No. 2,120,540. Manufacture is under license of the Cabot company, patent owner..

for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public. The statute seeks to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their rights. The inventor must 'inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.' The claims 'measure the invention.' . . . In a limited field the variant must be clearly defined."

The District Court found that the claims did not meet these requirements, and the Circuit Court of Appeals held that they did. Much testimony was directed to this question at the trial, and it has been discussed in the briefs and argument in this Court. Petitioner seeks reversal on the grounds of anticipation and non-infringement. The scope and sufficiency of the claims in suit necessarily present themselves as preliminary problems in the resolution of these ultimate issues. The courts in determining the questions of invention and infringement brought to them by respondent, no less than the parties-litigant, need and may insist upon the precision enjoined by the statute. To sustain claims so indefinite as not to give the notice required by the statute would be in direct contravention of the public interest which Congress therein recognized and sought to protect. Cf. *Muncie Gear Works* v. *Outboard Marine & Manufacturing Co.*, 315 U. S. 759.

Here, as in many other cases, it is difficult for persons not skilled in the art to measure the inclusions or to appreciate the distinctions which may exist in the words of a claim when read in the context of the art itself. The clearest exposition of the significance which the terms employed in the claims had for those skilled in the art was given by the testimony of Weigand, one of the patentees, whom respondent called as its witness. Weigand was employed as Director of Research of the Columbian Carbon Company, whose stock respondent owned, and for whom respondent acted as sole selling agent. His testimony in this respect was given principally upon cross-examination, but it was in no wise impeached or contradicted, and is borne out by that of other witnesses. From it we learn that "substantially pure" refers, not to freedom from ash and other impurities, but rather to freedom from binders; "commercially uniform" means only the degree of uniformity demanded by buyers; "comparatively small"

is not shown to add anything to the claims, for nowhere are we advised what standard is intended for comparisons; "spongy" and "porous" are synonomous, and relate to the density and gas content of aggregates of carbon black. Although sponginess or porosity is not a necessary attribute of a friable substance, it does contribute to the friability of aggregates of carbon black. It is of value only in that regard. A spongy or porous aggregate of carbon black may be so friable as to permit of the formation of dust; and, on the other hand, it is conceivable that it might not be sufficiently friable to mix satisfactorily with other substances such as those used in the manufacture of rubber products. The correct degree of friability can be ascertained only by testing the performance of the product in actual processes of manufacture of products of which carbon black is a component. A "pellet" of carbon black is "a spheroidal shaped aggregate that has substance and strength to it." For "strength" "we have this rough and ready test: does it survive under gentle rubbing of the fingers. I would not say that is an adequate test to predicate rubber behavior on, but it is a rough and ready test;" and if it responds to that test it is a pellet within the meaning of the claim. Finally, what on first impression appears to be reasonable certainty of dimension disappears when we learn that "approximately one-sixteenth of an inch in diameter" includes a variation from approximately 1/4th to 1/100th of an inch.

So read, the claims are but inaccurate suggestions of the functions of the product, and fall afoul of the rule that a patentee may not broaden his claims by describing the product in terms of function. *Holland Furniture Co.* v. *Perkins Glue Co.*, 277 U. S. 245, 256-258; *General Electric Co.* v. *Wabash Corp.*, *supra*, at 371-372.

Respondent urges that the claims must be read in the light of the patent specification,[5] and that as so read they are sufficiently definite. Assuming the propriety of this method of construction, cf. *General Electric Co.* v. *Wabash Corp.*, *supra*, at 373-

[5] This states in pertinent part that:

"The main object of our invention is to secure carbon black having the desired dispersive properties, greater density, freedom from dust, freedom from gritty particles, less absorbed or occluded gases, reduced oil absorption than the ordinary powder form, and capable of considerable handling without crushing or dusting.

. . . . . .

"This process, if carried out under certain conditions, causes the carbon black to form into pellets which are hard enough to stand any ordinary ship-

375, it does not have the effect claimed, for the description in the specification is itself almost entirely in terms of function. It is therefore unnecessary to consider whether the rejection of certain claims[6] by the Patent Office might in turn deprive the specification of any curative effect in this regard. Cf. *Schriber-Schroth Co.* v. *Cleveland Trust Co.*, 311 U. S. 211; *Exhibit Supply Co.* v. *Ace Patents Corp.*, 315 U. S. 126.

The statutory requirement of particularity and distinctness in claims is met only when they clearly distinguish what is claimed from what went before in the art and clearly circumscribe what

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ment or handling without dusting, flying or breaking down, and which at the same time are easily crushed by moderate pressure, as between the fingers or by the pressures commonly employed in the rolls of rubber compounding machinery, printers ink mixers and the like. The crushed particles have substantially their original softness and the material disperses freely without leaving any particles of undispersed carbon in the material.

"While the pellet form is a very convenient form of the carbon black, the shape of the particles is not the most important characteristic of this novel carbon black.

"The pellets are very porous, of substantially spherical or globular form, have a smooth somewhat lustrous outer surface which is not easily broken by handling, are more compact than untreated carbon, are fragile under light pressure, and may be easily reduced to soft minute particles which cannot be told from the original particles except that possibly they have a more unctuous feel. They somewhat resemble lead shot and may be rolled in the hand without dirtying or dusting. Apparently the outer surface portion or shell of each pellet is slightly more compact than the inner part, but still porous.

"In shipping or storing, we find that approximately twice the number of pounds of these pellets can be placed in a container of a given size than is the case with the untreated carbon black. Thus, expense is reduced for shipment or storage.

"There are various factors which enter into the process and these may be varied to get the pellets harder or softer or larger or smaller. Among these factors are the thickness of the paste, the amount of gasoline used, the adding of the gasoline in bulk or a little at a time, speed of agitation, temperature, type of gasoline used, and character of the carbon black.

"If small pellets are desired, a lesser amount of gasoline or other liquid should be used in respect to the amount of water and carbon, and greater agitation should be employed. To secure large pellets, we use a larger amount of gasoline and slower agitation. In practice, we do not consider a size larger than one-quarter of an inch desirable. There are many kinds, grades or varieties of carbon black and often identification of the particular kind or grade is difficult. With our improved process the different kinds or grades may be made into pellets of different sizes so that identification is facilitated, for instance, very small pellets may be made for printers ink and larger ones for rubber, etc."

[6] To meet objections of the examiner, the following product claims were withdrawn in course of prosecution of the application:

"4. A pellet formed of (substantially pure) soft carbon black particles, the pellet being sufficiently hard to withstand ordinary shipment or handling,

is foreclosed from future enterprise. A zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field. Moreover, the claims must be reasonably clear-cut to enable courts to determine whether novelty and invention are genuine. Congress has provided that a patent may be awarded only for a new and useful manufacture "not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof." R. S. § 4886, 35 U. S. C. § 31. While we do not find it necessary to consider questions of novelty and invention, in the view we take of the claims in suit, a mere reading of prior art patents shows how, if they are read with the liberality and inclusiveness claimed for those in suit, they describe products, if not identical, at least of confusing similarity.[7] Whether the vagueness of the claim has its source in the language employed or in the somewhat indeterminate character of the advance claimed to have been made in the art is not material. An invention must be capable of accurate definition, and it must be accurately defined, to be patentable. Cf. *General Electric Co.* v. *Wabash Corp.*, *supra*, at 372-373.

We are of opinion that the claims in litigation are bad for indefiniteness, and have no occasion to consider questions of novelty, invention, and infrigement. The judgment below is

Reversed.

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but readily breaking down to a fine state of subdivision upon the application of slight pressure.

"8. Soft carbon black particles cohering in small masses of substantially uniform size and having smooth outer surfaces.

"2. Carbon black in the form of pellets of sponge-like or porous structure.

"7. A carbon black pellet formed of soft carbon black, the pellet having sufficient hardness to withstand ordinary shipment or handling without dusting, but sufficiently fragile to permit reduction to the original fine state of subdivision upon the application of light pressure." (*Added by amendment.)

[7] The prior Knowlton and Hoffman patent, No. 1,286,024, stated in the specification that "Instead of using the lampblack in its natural condition, we prepare and treat the fine powder so as to cause its concretion into friable grains or small lumps, dry and substantially free from dust, and in this form incorporate it with the rubber on the roller mill . . . . the friability of the lumps or grains permitting a uniform distribution of the filler throughout the rubber." Claim No. 7 of this patent is: "The method of compounding rubber with lampblack which consists in mixing the lampblack with water and a binder, producing a granular condition, evaporating the water, and incorporating the dry, granular lampblack with rubber on a heated mixing mill."

Claim No. 10 of the prior Coffin and Keen patent, No. 1,561,971 is: "As a new article of manufacture, dried pulverulent material in the form of very small individually dried friable globular masses composed of lightly cohering particles of the material."